
Testimony of
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Before the
Subcommittee on Energy and Air Quality of the
Committee on Energy and Commerce

U.S. House of Representatives

Hearing:
“Strengths and Weaknesses of
Regulating Greenhouse Gas Emissions
Using Existing Clean Air Act Authorities”

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Thank you for the opportunity to testify before you today. My name is Lisa Heinzerling. I am a Professor of Law at the Georgetown University Law Center. My expertise is in environmental and administrative law. Perhaps most pertinent to today's hearing, I was the lead author of the winning briefs for Massachusetts and other petitioners in *Massachusetts v. EPA*, in which the Supreme Court held that Environmental Protection Agency has the authority to regulate greenhouse gases under the Clean Air Act.

In this testimony, I discuss provisions of the Clean Air Act, as it stands today, which provide authority to regulate greenhouse gases. I explore the following specific matters:

- (1) the statutory triggers that obligate EPA to regulate under various statutory provisions;
- (2) the criteria for setting and implementing standards under the Clean Air Act's regulatory provisions;
- (3) EPA's flexibility to develop a cap-and-trade program under existing provisions of the Clean Air Act; and

(4) the strengths and weaknesses of relying on the Clean Air Act as currently constituted to address the problem of climate change.

Before turning to these issues, I begin with a brief description of the Supreme Court decision, *Massachusetts v. EPA*, which brought us to this point.

Massachusetts v. EPA

In *Massachusetts v. EPA*, 127 S.Ct. 1438 (2007), the Supreme Court held that greenhouse gases are “air pollutants” within the meaning of the Clean Air Act and that the Act gives EPA authority to regulate them. In addition, the Court held that EPA could not refuse to exercise this authority by citing policy considerations not enumerated in the statute or by referring generally to the scientific uncertainty remaining with respect to climate change.

The Court made several important observations about EPA’s obligations on remand. First, it held that EPA *must* regulate greenhouse gases from motor vehicles if the agency finds that they may reasonably be anticipated to endanger public health or welfare. (“If EPA makes a finding of endangerment, the Clean Air Act requires the agency to regulate emissions of the deleterious pollutant from new motor vehicles.” 127 S.Ct. at 1462.) Second, to avoid regulating greenhouse gases, EPA must make one of two findings. Either the agency must find that greenhouse gases may not reasonably be anticipated to endanger public health or welfare *or* it must conclude that there is not enough information to make a decision on endangerment. (“EPA can avoid taking further action only if it determines that greenhouse gases do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do.... If the scientific uncertainty is so

profound that it precludes EPA from making a reasoned judgment as to whether greenhouse gases contribute to global warming, EPA must say so.... The statutory question is whether sufficient information exists to make an endangerment finding.” 127 S.Ct. at 1462-63.) The Court’s decision in *Massachusetts v. EPA* thus directs EPA to follow the scientific evidence on climate change wherever it leads and to regulate greenhouse gas emissions from motor vehicles if that scientific evidence shows endangerment.

Massachusetts v. EPA settles three issues of central relevance to today’s hearing: (1) any Clean Air Act provisions that regulate “air pollutants” permit regulation of greenhouse gases; (2) a finding of “endangerment” triggers an obligation to regulate mobile sources under section 202 of the Clean Air Act, which, as we shall see, is strikingly similar to other regulatory provisions of the Act; and (3) EPA may not sweep aside its obligations under the Clean Air Act by citing policy concerns not embodied in the statute itself. The latter course is exactly the one EPA, for now, has chosen. Rather than dwelling on EPA’s current failings, however, I will discuss the actions a willing EPA could take under the Clean Air Act, right now, to address climate change.

Regulatory Triggers

The most common trigger for regulation under the Clean Air Act is a finding of endangerment. However, some important regulatory provisions have different triggers. The exact contours of the latter provisions have not yet been resolved. Cars, fuels, power plants, factories, aircraft, and more are subject to the provisions triggered by the findings and events described below.

The Clean Air Act directs EPA Administrator to regulate numerous sources of air pollution once he has found that an air pollutant emitted by them may reasonably be anticipated to endanger public health or welfare. In *Massachusetts v. EPA*, the Supreme Court explicitly held that regulation of motor vehicles under section 202 of the Clean Air Act must follow once the EPA Administrator makes such an endangerment finding. 127 S.Ct. at 1462. The same is true for many other sources of air pollution.

Section 111(b)(1)(A) of the Clean Air Act, for example, provides that EPA “shall” include on a list a category of stationary sources “if in his judgment it causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.” 42 U.S.C. 7411(b)(1)(A). Section 111(b)(1)(B) requires the Administrator to regulate new sources included on this list. 42 U.S.C. 7411(b)(1)(B). Section 111(d) requires the Administrator, acting in concert with the States, to regulate existing sources included on this list. 42 U.S.C. 7411(d). There is little doubt that many categories of stationary sources – including, for example, power plants – emit greenhouse gases and thus “cause[]” air pollution which the Administrator has concluded endangers public health and welfare. Under section 111, the Administrator “shall” include these sources on a list and then “shall” regulate them. 42 U.S.C. 7411(b)(1)(A), 7411(b)(1)(B), 7411(d).

Regarding power plants specifically, in 2006, EPA refused to regulate greenhouse gases from electric utility and several other steam generating units under section 111 because, the agency explained, “it does not presently have the authority to regulate CO₂ or other greenhouse gases that contribute to global climate change.” 71 Fed. Reg. 9866,

9869. After *Massachusetts v. EPA*, this reasoning is no longer legally valid. The D.C. Circuit has remanded a challenge to EPA's decision to the agency.

Similarly, section 231(a)(2)(A) provides that the Administrator "shall" issue proposed standards for "the emission of any air pollutant from any class or classes of aircraft engines which in his judgment causes, or contributes to, air pollution which may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. 7571(a)(2)(A). Currently pending before EPA are two petitions asking EPA to regulate greenhouse gas emissions from aircraft. (California filed one petition, which is available at http://cdn.sfgate.com/gate/pictures/2007/12/05/ga_aircraftpet6.pdf. Environmental groups filed another, available at http://cdn.sfgate.com/gate/pictures/2007/12/05/ga_aircraftghgpet.pdf.)

Provisions regarding the regulation of fuels (42 U.S.C. 7545(c)(1)(A)) and nonroad engines (42 U.S.C. 7547(a)(4)) provide somewhat more discretion to the Administrator because they state that he "may" rather than "shall" regulate after a finding of endangerment. Nevertheless, the Administrator will need to take into account a finding of endangerment in explaining his course of action under these provisions. Here, too, a petition to regulate greenhouse gases (in this case, from nonroad engines) awaits a response from EPA. (The petition is available at http://ag.ca.gov/cms_pdfs/press/N1474_Petition.pdf.) As the Supreme Court said in *Massachusetts v. EPA*, in responding to a petition for rulemaking, the agency's "reasons for action or inaction must conform to the authorizing statute," and EPA must offer a "reasoned explanation" for its decisions. 127 S.Ct. at 1462, 1463. Thus, the mere existence of some discretion on the part of EPA, suggested by the inclusion of the word

“may” with respect to regulation of fuels and nonroad engines, does not dilute the agency’s general obligation to follow statutory criteria and explain its decisions in reasoned terms.

A judgment that an air pollutant may reasonably be anticipated to endanger public health or welfare is also a prerequisite to setting a National Ambient Air Quality Standard (NAAQS) for that pollutant under sections 108 and 109 of the Act. Two other triggering provisions also apply to the NAAQS: the pollutant must be emitted by “numerous or diverse mobile or stationary sources” (42 U.S.C. § 7408(a)(1)(B)), and the pollutant must be one either for which air quality criteria (the scientific documents on which EPA relies in setting the NAAQS) had been issued when the Clean Air Act was passed on 1970 or for which the Administrator “plans to issue” air quality criteria under section 108. 42 U.S.C. § 7408(a)(1)(C). The latter provision, in particular, may provide the Administrator somewhat more wiggle room in deciding whether to issue a NAAQS for a greenhouse gas, even after an endangerment finding.

Another provision that provides a different trigger for regulation – a trigger, that is, other than an endangerment finding – is section 169, concerning the Act’s Prevention of Significant Deterioration (PSD) program. Section 169 requires, for certain enumerated sources, that “each pollutant *subject to regulation* under this chapter” be controlled by the “best available control technology.” 42 U.S.C. 7479(3) (emphasis added). EPA has stated that once greenhouse gases are regulated under provisions of the Act requiring emissions reductions, section 169 is triggered and the covered sources must be regulated. In a case pending before EPA’s Environmental Appeals Board (In the matter of: Deseret Power Electric Cooperative (Bonanza), PSD Appeal No. 07-03), groups challenging an

EPA decision granting a PSD permit to a coal-fired facility in Utah argue that greenhouse gases are *already* “subject to regulation” under the Clean Air Act because section 821 requires the monitoring and reporting of carbon dioxide emissions. Thus the exact trigger for regulation under section 169 remains unresolved.

Criteria for Setting and Implementing Regulatory Standards

Each of the provisions discussed above also describes the criteria EPA must use in setting regulatory standards under these provisions and/or implementing such standards. These provisions differ slightly in their particulars, but all save one share a common element: they all direct EPA’s attention to economic costs. *See* 42 U.S.C. § 7478(3) (sources regulated under PSD program); 42 U.S.C. § 7521(a)(2) (mobile sources); 42 U.S.C. § 7521(a)(3)(A) (heavy-duty engines); 42 U.S.C. § 7545(c)(2)(B) (fuel additives); 42 U.S.C. § 7411(a)(1), (b)(1) (new stationary sources); 42 U.S.C. § 7547(a)(3) (nonroad vehicles); 42 U.S.C. § 7571(b) (aircraft). Only the NAAQS are to be set without reference to the costs of regulation. *See Whitman v. American Trucking Ass’ns*, 531 U.S. 457 (2001).

Other factors relevant to setting and/or implementing regulatory standards under the Act include the availability of control technology (42 U.S.C. § 7521(a)(3)(A)(i) (mobile sources), 42 U.S.C. § 7523(a)(4) (nonroad engines and vehicles)); energy impacts (see, e.g., 42 U.S.C. § 7521(a)(3)(A) (heavy-duty engines)); the health and welfare effects of product substitutes (42 U.S.C. § 7545(c)(2)(C) (fuels and fuel additives)); effects on safety (42 U.S.C. § 7521(a)(4) (mobile sources), 42 U.S.C. § 7547(a)(4) (nonroad engines and vehicles)); and noise (42 U.S.C. § 7547(a)(4) (nonroad

engines and vehicles)). The exact mix of the factors that EPA must consider in setting or implementing standards differs, obviously, from source to source.

EPA's Flexibility in Setting and Implementing Standards

Especially pertinent to today's hearing is the question of how much flexibility EPA is afforded in setting and implementing standards under the Clean Air Act. In particular, could EPA regulate greenhouse gases through a cap-and-trade program set up under the current Act? The answer is not straightforward; it depends on the specific text and structure of the relevant provision. From the outset, however, one generalization is possible: the regulatory provisions of the Clean Air Act appear, for the most part, not to have been written with a cap-and-trade program in mind. Developing a cap-and-trade program under these provisions would thus, at the very least, require a good bit of interpretive creativity.

I will start by discussing the mobile source program at issue in *Massachusetts v. EPA*. Section 202 of the Act directs the Administrator, upon a finding of endangerment, to "prescribe ... standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines." 42 U.S.C. § 7521(a)(1). On its own, this directive does not appear to limit EPA's authority to regulate automobiles through use of a cap-and-trade program, whether applicable only to the automobile industry or to a more general category of sources. However, section 202 goes on to state that the mobile source standards "shall be applicable to such vehicles and engines for their useful life ... whether such vehicles and engines are designed as complete systems or incorporate devices to prevent or control such pollution." 42 U.S.C.

§ 7521(a)(1). This requirement appears to imply that the pollution from each individual vehicle or engine must be separately controlled, either through a “complete system” or through a “device.” A cap-and-trade system does not ensure this result.

Turning to fuels, section 211 of the Act gives EPA the authority to “control or prohibit” a fuel or fuel additive under certain conditions. 42 U.S.C. § 7545(c). This provision does not appear to curtail EPA’s authority to “control” fuels or fuel additives through a trading program.

For nonroad engines and vehicles, Congress has given EPA the authority to issue “such regulations as the Administrator deems appropriate containing standards applicable to emissions from those classes or categories of new nonroad engines and new nonroad vehicles” meeting the endangerment threshold. 42 U.S.C. § 7547(a)(4). Congress premised these standards on the existence of pollution control technology, instructing EPA to consider certain factors “associated with the application of technology which the Administrator determines will be available for the engines and vehicles to which such standards apply.” 42 U.S.C. 7547(a)(4). Yet Congress did not expressly instruct EPA to require the use of any particular technology in its standards for nonroad engines and vehicles. Nor did Congress strongly imply, as it did with respect to mobile sources under section 202, that the pollution from each individual source (each nonroad engine or vehicle) must be controlled. Congress did require (as it had with respect to mobile sources) that the standards for new nonroad engines and vehicles apply “to the useful life of the engines or vehicles,” 42 U.S.C. § 7547(a)(4), which might be taken to suggest that Congress had in mind standards that would apply separately to each engine or vehicle,

and not an overarching cap-and-trade program that might leave some individual engines or vehicles unchanged by the regulatory framework.

For the specific class of nonroad engines and vehicles that includes locomotives and engines used in locomotives, Congress directed that EPA issue regulations reflecting “the greatest degree of emission reduction achievable through the application of technology which the Administrator determines will be available for the locomotives and engines to which such standards apply,” taking into account several factors including cost. 42 U.S.C. § 7547(a)(5). Here, if EPA wanted to bring these sources into a cap-and-trade program, it would be required, at the very least, to ensure that the program’s cap reflected “the greatest degree of emission reduction achievable” from available control technology for these sources. Showing that a cap-and-trade program applicable to a broad category of sources, beyond only locomotives, satisfied this stringent criterion might be difficult.

As to standards for aircraft, the Act speaks in terms of “emission standards” applicable to “any class or classes of aircraft engines.” 42 U.S.C. § 7571(a)(2)(A). While EPA must study the “technological feasibility” of controlling aircraft emissions, 42 U.S.C. § 7571(a)(1)(B), the Act does not expressly require EPA to impose specific technological requirements on each individual airplane. Nevertheless, the use of the term “emission standards” in this section invites reference to the definition of this phrase in section 302 of the Act. There, the Act defines “emission standards” as “a requirement established by ... the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and

any design, equipment, work practice or operational standard promulgated under this chapter.” 42 U.S.C. § 7601(k). The cap set by a cap-and-trade program, and the requirement that individual sources hold allowances that reflect their own emissions, fits awkwardly, at best, into this provision. Perhaps such requirements could be viewed as “operational standards,” but to the extent this latter term is given meaning by the words around it – “design, equipment, work practice” standard – it does not appear naturally to refer to the kinds of strictures imposed by a cap-and-trade program.

The possibility of using a cap-and-trade program to regulate stationary sources under section 111 is even shakier. Although EPA asserted the power to create a cap-and-trade program for mercury under section 111, *see* 70 Fed. Reg. 28606, EPA’s entire mercury rule was recently invalidated by the D.C. Circuit due to EPA’s failure to follow the proper procedures in delisting mercury as a hazardous air pollutant under section 112 of the Act. *New Jersey v. EPA*, 2008 U.S. App. LEXIS 2797 (2008). The court did not decide whether EPA had lawfully interpreted section 111(d) to permit the creation of a cap-and-trade scheme for existing electricity generating units. EPA had argued that section 111(d)(1) authorized the agency to issue rules creating a state-initiated framework under which each state would submit to EPA a plan that “establishes standards of performance for any existing source” for certain air pollutants. 42 U.S.C. 7411(d)(1). Section 111(a) defines, “(f)or purposes of ... section (111),” the term “standard of performance” to mean “a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) the

Administrator determines has been adequately demonstrated.” 42 U.S.C. 7411(a)(1). In creating a cap-and-trade scheme for mercury under section 111, EPA argued as follows:

A cap-and-trade program reduces the overall amount of emissions by requiring sources to hold allowances to cover their emissions on a one-for-one basis; by limiting overall allowances so that they cannot exceed specified levels (the "cap"); and by reducing the cap to less than the amount of emissions actually emitted, or allowed to be emitted, at the start of the program.... Authorizing the allowances to be traded maximizes the cost-effectiveness of the emissions reductions in accordance with market forces. Sources have an incentive to endeavor to reduce their emissions cost-effectively; if they can reduce emissions below the number of allowances they receive, they may then sell their excess allowances on the open market....

The term "standard of performance" is not explicitly defined to include or exclude an emissions cap and allowance trading program. ... EPA interprets the term "standard of performance," as applied to existing sources, to include a cap-and-trade program. This interpretation is supported by a careful reading of the section 111(a) definition of the term, quoted above: A requirement for a cap-and-trade program (i) constitutes a "standard for emissions of air pollutants" (*i.e.*, a rule for air emissions), (ii) "which reflects the degree of emission limitation achievable" (*i.e.*, which requires an amount of emissions reductions that can be achieved), (iii) "through application of (a) ... system of emission reduction" (*i.e.*, in this case, a cap-and-trade program that caps allowances at a level lower than current emissions).

Numerous parties have argued that section 111 does not authorize the creation of a cap-and-trade program. Among other things, section 111(h) provides a contingency plan in the event performance standards are “not feasible” to implement. In that case, section 111(h) gives EPA the authority to “promulgate a design, equipment, work practice, or operational standard, or combination thereof, which reflects the best technological system of continuous emissions reduction which ... the Administrator determines has been adequately demonstrated.” 42 U.S.C. § 7411(h)(1). One of the ways a performance standard might prove “not feasible” is if “a pollutant or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutants.” 42 U.S.C. § 7411(h)(2)(A). Clearly, Congress thought the most likely scenario under

section 111 was for pollutants to be “emitted through a conveyance designed and constructed to emit or capture such pollutant[s]” – an assumption at odds with the operation of a trading program. Other aspects of section 111 also point away from the creation of a trading program under this provision. (For more details, see Lisa Heinzerling and Rena I. Steinzor, *A Perfect Storm: Mercury and the Bush Administration*, 34 ENVTL. L. REP. 10297, 10309 (April 2004).)

Creating a cap-and-trade program for stationary sources subject to the PSD program might prove even trickier. Section 165(a)(4) requires that each facility covered by PSD requirements be “subject to the best available control technology for each pollutant subject to regulation under this chapter emitted from, or which results from, such facility.” 42 U.S.C. § 7475(a)(4). This provision appears to require individual, technology-based requirements for each individual facility, a requirement in considerable tension with a cap-and-trade scheme.

Developing a cap-and-trade scheme under any one of the provisions discussed above is also complicated by the explicit approval, in some Clean Air Act provisions, of a trading scheme. The best-known of these is the national cap-and-trade scheme created by Subchapter IV to deal with acid deposition. Less well known is the explicit approval of trading regimes for state programs aimed at achieving the NAAQS. 42 U.S.C. § 7410(a)(2)(A). Both provisions might suggest a negative inference with respect to trading under other parts of the Act: because these provisions explicitly permit emissions trading, it might be argued that the provisions that do not mention trading do not allow it.

Cutting in the other direction, administrative agencies, including EPA, have considerable discretion not only in interpreting less than crystalline statutory mandates,

but also in deciding how they will enforce them. One possibility, offered in California's petition to EPA asking the agency to regulate greenhouse gas emissions from aircraft, would be to adopt a trading regime as part of an overall enforcement strategy for greenhouse gas emissions.

Given that EPA has offered no program whatsoever to address greenhouse gases, much less a program with a fully developed cap-and-trade plan, these comments on the potential lawfulness of a trading program under various provisions of the Clean Air Act are necessarily hypothetical and preliminary. Nevertheless, they do suggest that EPA will face some tough interpretive choices in designing a regulatory program to address greenhouse gases under the Act as it currently exists.

Strengths and Weaknesses of Relying on Clean Air Act to Address Climate Change

As is evident by now, the Clean Air Act contains numerous provisions that might be used to regulate greenhouse gases. The advantages of using these provisions include: they can be deployed now; they use regulatory strategies that are familiar to, indeed are the bread and butter work of, the Environmental Protection Agency; they call for regulation of numerous and diverse sources and thus, taken as a group, they have an inherent fairness to them; they do not pose unusual enforcement difficulties or untoward administrative burdens.

There are also disadvantages to using existing Clean Air Act provisions to address climate change. Most of the provisions do not have statutory deadlines, which makes their implementation captive (as we are now seeing) to an unwilling executive agency. To the extent one favors cap-and-trade as a regulatory mechanism for addressing climate

change, one might worry about the lack of clear authority for such a scheme under the existing statute. The NAAQS program is an ungainly framework for regulating globally harmful pollutants. PSD requirements are triggered for sources that are “large” when it comes to conventional pollution but “small” from the perspective of global pollutants.

Put simply, the Clean Air Act is an excellent off-the-rack garment for greenhouse gas regulation, but it may be that Congress wants a more tailored fit.